^{63}Nickel Electron Capture Detector Radioactive Leak Wipe Test Kit Instructions

Service Information

General

In the United States, the Nuclear Regulatory Commission (NRC) requires that certain measuring, gauging or controlling devices, such as ^{63}Ni Electron Capture Detectors (ECD's), be tested for radioactive leakage at intervals not to exceed 6 months.[1] It is essential that this test be performed and records be maintained to comply with NRC guidelines. The user's first leak test should be performed no later than 6 months from the date on the wipe test certificate accompanying the new ECD purchased. You must retain the test certificate accompanying the ECD and all subsequent leak test records per NRC (or appplicable Agreement State[2]) regulations.

This information applies to any ECD manufactured by Agilent Technologies, Inc. or Hewlett-Packard Company containing a ^{63}Ni source.

1. Reference NRC regulation 10 CFR 31.5 (provided at time of original sale) for full details.
2. Owners in other countries should consult local and national regulatory bodies for equivalent requirements.

Agilent Technologies

WARNING ^{63}Ni is a low energy beta-emitter (maximum of 0.067 MeV). It is generally considered that greater than 0.07 MeV is required to penetrate the outer layer of skin. However, ^{63}Ni may be injurious if ingested, implanted under the skin, or inhaled. Adequate measures should be taken while performing the wipe test to prevent internalizing the radionuclide. At a minimum, the use of disposable plastic gloves while taking wipe samples and thorough washing of hands with soap and water upon completion of wipes is recommended.

The Leak (Wipe) Test Kit contains:

Performing the Leak (Wipe) Test

Description	Part No.	Quantity
Kit	18713-60050	1
Information card	18713-90040	12
Filter paper no. 41	3150-0429	12
Plastic bag (4 x 8 in.)	9222-0307	12
Service information	5950-3586	1

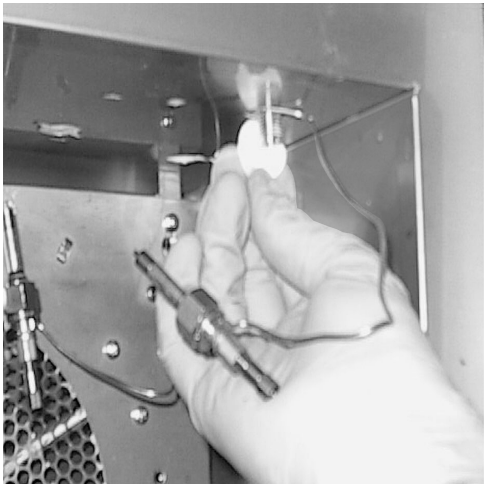
Each kit contains sufficient materials to perform four wipe tests. Extra wipe test kits can be purchased from Agilent Technologies, Inc. by calling 1-800-227-9770. To perform this test:

1. Turn off all detector gas flows.
2. Turn off the host GC and allow the ECD to cool to near ambient temperature.
3. Fill out three information cards.
4. Label three plastic bags as follows:
    - Sample 1 - Det. Inlet
    - Sample 2 - Det. Housing
    - Sample 3 - Det. Exit

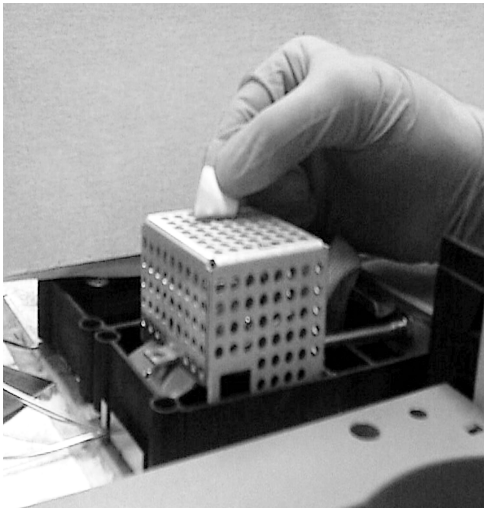
5. Once the ECD has cooled, disconnect the column from it.
6. Take the wipe samples for your GC model as shown below.

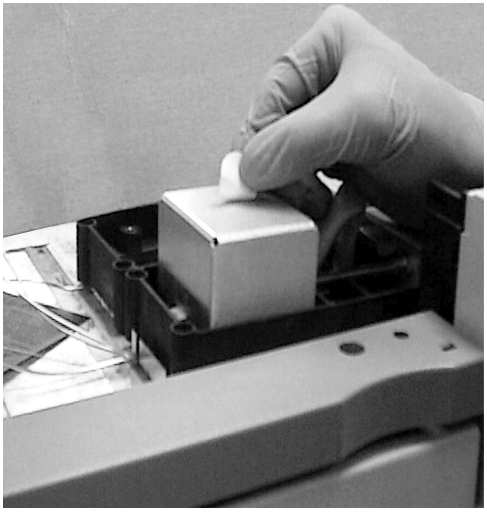
6890 GC ECD

1. Wipe the detector inlet (both inside entrance and threaded exterior) and the Column Adapter with a piece of filter paper. Insert the filter paper into the bag marked "Sample 1" and seal the bag.

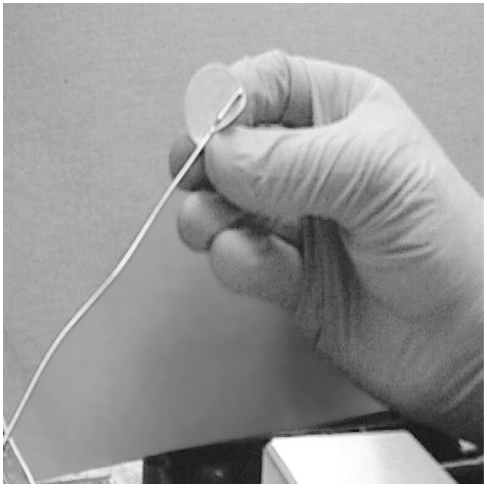


2. Wipe the exterior of the detector housing with a piece of filter paper. The Micro ECD cover is shown below on the left. The Standard ECD cover is shown below on the right. Insert the filter paper into the bag marked "Sample 2" and seal the bag.



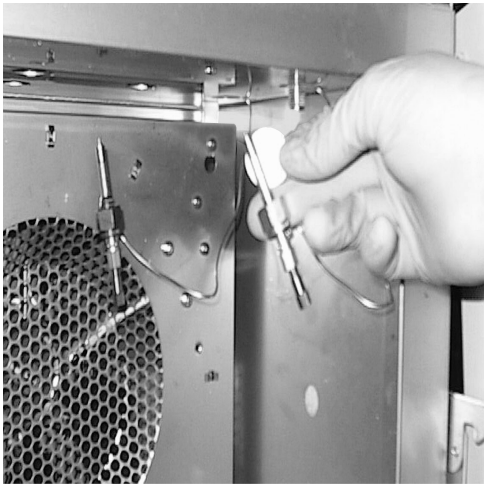


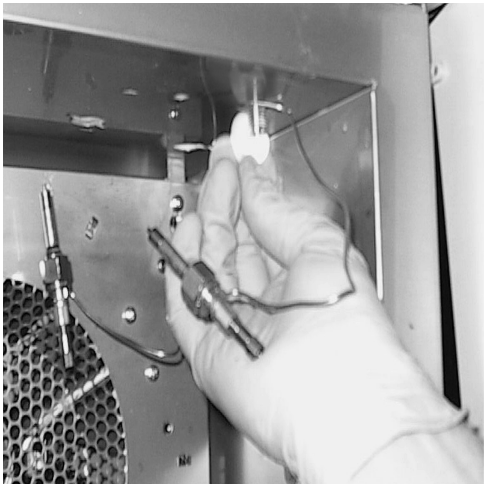
3. Disconnect the metal ECD exit tube from the vent line. Wipe the facing and immediate area near the ends of the exit tube and vent line with a piece of filter paper. Insert the filter paper into the bag marked "Sample 3" and seal the bag.



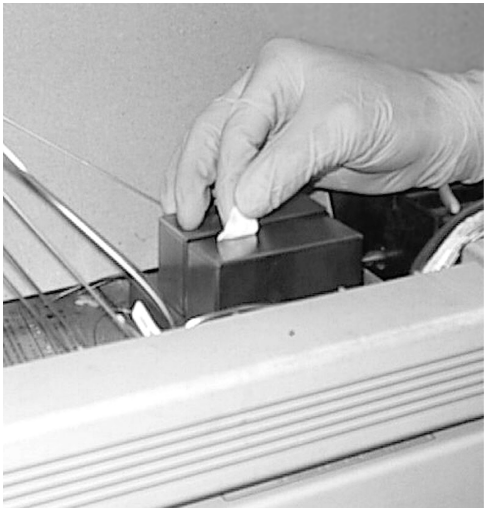
5890 GC ECD

1. Wipe the detector inlet (both inside entrance and threaded exterior) and the Column Adapter with a piece of filter paper. Insert the filter paper into the bag marked "Sample 1" and seal the bag.

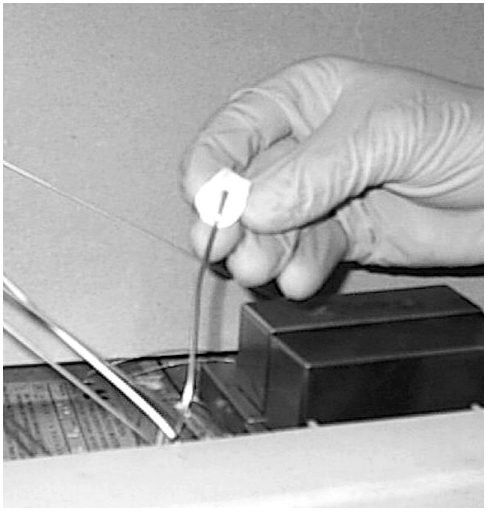


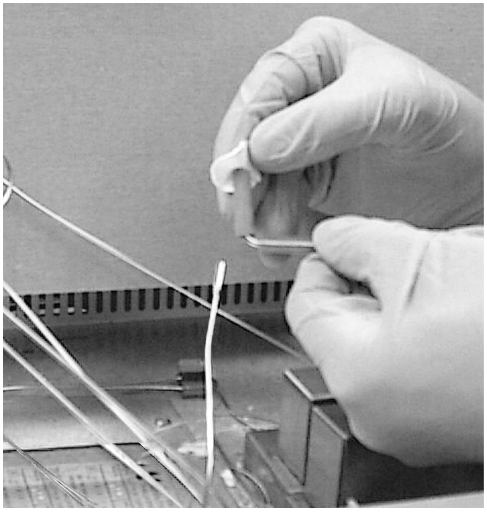


2. Wipe the exterior of the detector housing with a piece of filter paper. Insert the filter paper into the bag marked "Sample 2" and seal the bag.



3. Disconnect the metal ECD exit tube from the vent line. Wipe the facing and immediate area near the ends of the exit tube and vent line with a piece of filter paper. Insert the filter paper into the bag marked "Sample 3" and seal the bag.

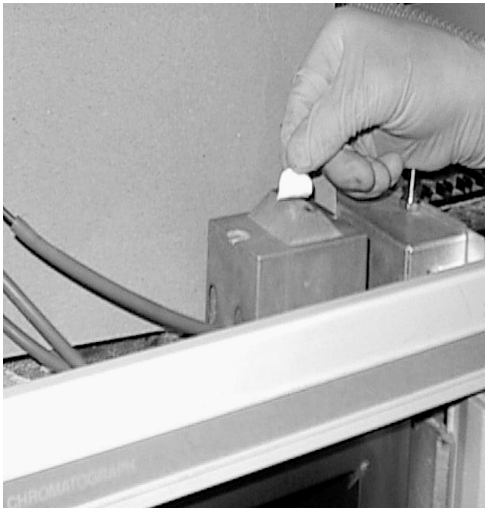




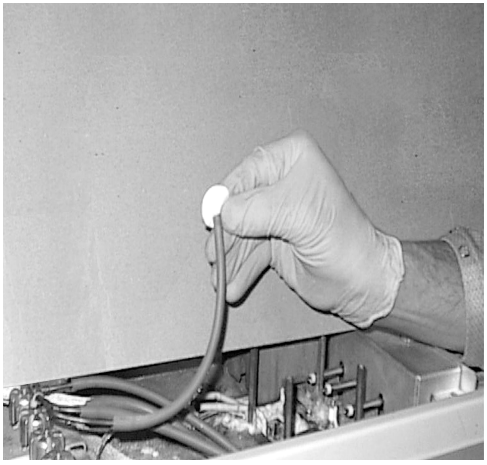
5880 GC ECD

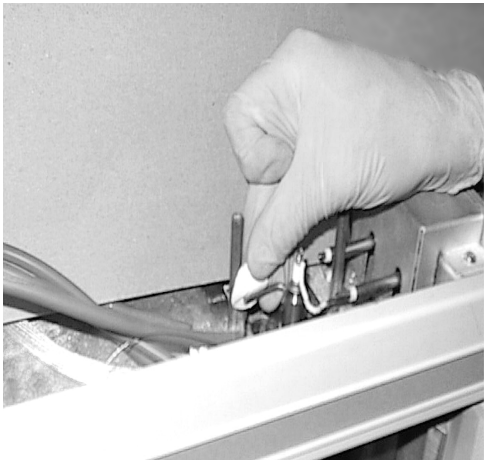
1. Wipe the detector inlet (both inside entrance and threaded exterior) and the Column Adapter with a piece of filter paper. Insert the filter paper into the bag marked "Sample 1" and seal the bag.

2. Wipe the exterior of the detector housing with a piece of filter paper. Insert the filter paper into the bag marked "Sample 2" and seal the bag.



3. Disconnect the metal ECD exit tube from the vent line. Wipe the facing and immediate area near the ends of the exit tube and vent line with a piece of filter paper. Insert the filter paper into the bag marked "Sample 3" and seal the bag.





4. Insert the completed information cards and sample bags into a standard mailing envelope and mail to a service company that is capable of analyzing for removable ^{63}Ni and which operates per NRC regulations for wipe tests. No special postal handling is necessary. Following are a few companies that provide this service.

Nuclear Radiation Developments Inc.
2937 Alt Boulevard
Grand Island, NY 14072
716-773-7634

National Leak Center Test
P.O. Box 1480
N. Tonawanda, NY 14120
716-693-0550

AEA
6765 Langley Dr.
Baton Rouge, LA 70809
225-751-5893

C. J. Bruyn & Co.
1612 Encanto
Walnut Creek, CA 94596
800-252-7896

NOTE: This list is provided as a convenience to our customers. Agilent does not endorse these firms nor warrant their work, nor has it received compensation for listing them. Please call any service company before submitting samples.

Response to High Wipe Results

Contact your regional NRC or applicable Agreement State's radiation office if your wipes meet or exceed the NRC wipe limit of 0.005 microcuries of removable activity.

Contact the Agilent Technologies, Inc. Technical Support Center at 1-800-227-9770 for additional assistance.

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